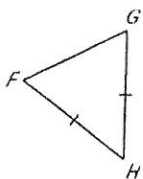


# Homework 57

## Isosceles Triangles

Name: \_\_\_\_\_  
Period: \_\_\_\_\_ Date: \_\_\_\_\_

1) In  $\triangle FGH$ ,  $FH \cong GH$ .

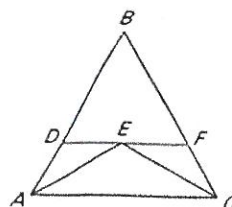


**\*BASE ANGLES THEOREM.**

a) Name two congruent angles.

b) Name the type of triangle.

2) Use the diagram below to answer part a) and b).



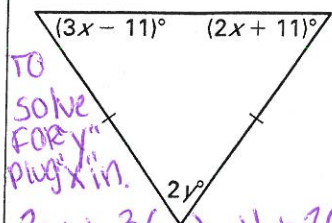
**\*BASE ANGLES THEOREM**

a) If  $AE \cong CE$ , then  $\angle \underline{\hspace{1cm}} \cong \angle \underline{\hspace{1cm}}$ .

b) If  $\angle DAE \cong \angle DEA$ , then  $\underline{\hspace{1cm}} \cong \underline{\hspace{1cm}}$ .

3) Find the values of  $x$  and  $y$  in the diagram.

**Solve for x**



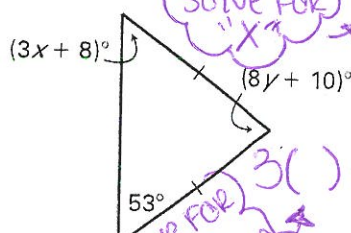
$$3x - 11 = 2x + 11$$

$$x = \underline{\hspace{1cm}}$$

$$2y + 3(\underline{\hspace{1cm}}) - 11 + 2(\underline{\hspace{1cm}}) + 11 = 180$$

$$y = \underline{\hspace{1cm}}$$

4) Find the values of  $x$  and  $y$  in the diagram.



$$3x + 8 = 53$$

$$x = \underline{\hspace{1cm}}$$

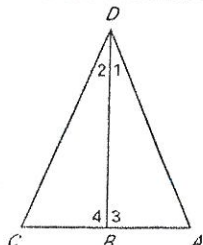
$$3(\underline{\hspace{1cm}}) + 8 + 8y + 10 + 53 = 180$$

$$y = \underline{\hspace{1cm}}$$

5) **GIVEN:**  $\overline{BD}$  bisects  $\overline{CA}$

$\overline{DB} \perp \overline{AC}$

**PROVE:**  $\triangle ADC$  is isosceles



**\*ALWAYS MARK**

- Given
- Reflexive Sides
- Vertical Angles

**(Bisects: DIVIDES CA in 2 congruent segments)**

**STATEMENT**

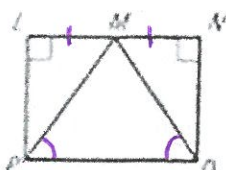
**REASON**

- $\overline{BD}$  bisects  $\overline{CA}$   
 $\overline{DB} \perp \overline{AC}$
- $\overline{CB} \cong \overline{BA}$
- $\angle 1 \cong \angle 2$   
 $\angle 3 \cong \angle 4$
- $\triangle ADC$  is isosceles

- Given
- 
- 
- 

6) **GIVEN:**  $\overline{LM} \cong \overline{NM}$ ,  $\angle MPQ \cong \angle MQP$

**PROVE:**  $\triangle LMP \cong \triangle NMQ$



**STATEMENT**

**REASON**

- $\overline{LM} \cong \overline{NM}$ ,  
 $\angle MPQ \cong \angle MQP$
- $\overline{MP} \cong \underline{\hspace{1cm}}$

- Given
-